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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/665,915

09/20/2000

TSUKASA YAGI

15162/02500

8552

24367

7590

09/08/2004

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EXAMINER

PHAM, HAI CHI

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/665,915

Applicant(s)

YAGI ET AL.

Examiner

Hai C Pham

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 05/18/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyagawa (U.S. 6,081,321).

Miyagawa discloses an optical writing device comprising a light source (21), which emits light of a plurality of colors switching from one to another in order (using the

Art Unit: 2861

RGB filter 25, which changes the transmitted color by repeating the sequence R, G, B) (col. 3, lines 27-36), a plurality of light shutter elements made of a material with an electro-optical effect (optical shutter 30 being made of PLZT having the transmittance characteristics of the electro-optical effect), said light shutter elements controlling in accordance with image data whether to transmit or not transmit the light which has been emitted from the light source and is incident to the light shutter elements (col. 3, lines 42-65), and a driver (driver integrated circuits 40) for driving the light shutter elements, said driver altering a driving condition in synchronization with switch of the colors of the light source (the driving voltage V_d being applied to the optical shutter device, the driving voltage having the optimum values R_v , G_v and B_v at the transition of the respective transmission colors) (col. 4, lines 24-40).

Miyagawa further teaches:

- wherein the light source comprises a lamp (halogen lamp 21), and a multiple color filter (RGB filter 25), which is located between the lamp and the light shutter elements (30), and by switching the multiple color filter in order, the light incident to the light shutter elements is switched between a plurality of colors in order (col. 4, lines 52-64),
- wherein the driving condition to be altered is a driving voltage applied to the light shutter elements (applying the optimum voltages R_v , G_v and B_v at the transition of the respective colors R, G and B).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4-8, 11, 13-16, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyagawa in view of Shingaki et al. (U.S. 4,932,761).

Miyagawa discloses all the basic limitations of the claimed invention including applying the corresponding optimum voltages known as half-wave voltages to the optical shutter device at the transition of the transmission of the primary colors R, G, B, but Miyagawa does not explicitly the common electrode and the individual electrodes of the optical shutter elements, and the spike pulse voltage at a start of applying the driving voltage.

Shingaki et al. discloses a method and device for driving an electro-optical light shutter device (10), wherein each element (1) of the light shutter device is provided with corresponding individual electrode (20), which are driven in accordance with image data and a common electrode (22) being biased with the common electrode driver (23) (Fig. 18), and wherein the individual electrodes are set to have a potential corresponding to the half-wave voltage (col. 6, lines 53-63). Shingaki et al. further teaches the driver superimposing a spike pulse voltage at a start of applying the driving voltage to the light shutter elements (Fig. 21) (col. 7, lines 15-26).

Art Unit: 2861

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the necessary individual and common electrodes to the light shutter device of Miyagawa since Shingaki et al. teaches this to be well known in the art such that an optimum potential equivalent to the half-wave voltage can be set across the electrodes of each light shutter element. It would have been also obvious at the time the invention was made to a person having ordinary skill in the art to provide the spike pulse voltage at a start of applying the driving voltage to the light shutter device of Miyagawa as taught by Shingaki et al. The motivation for doing so would have been to allow the intensity of light transmitted through the shutter to be raised sufficiently within a short period of time as suggested by Shingaki et al. at col. 7, lines 23-26.

6. Claims 9-10, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyagawa in view of Matsubara et al. (U.S. 5,155,618).

Miyagawa discloses all the basic limitations of the claimed invention except for the driver inverting electric field acting on the light shutter elements at specified cycles.

Matsubara et al. discloses an optical shutter device whose shutter elements (3a, 3b...) each having an individual electrode (2a, 2b...) and a common electrode (4) wherein a bias voltage V_r is applied to the common electrode to reverse the polarization of each of the shutter elements during the non-recording period (Fig.5).

It would have been also obvious at the time the invention was made to a person having ordinary skill in the art to provide the negative bias to the shutter elements in the

Art Unit: 2861

device of Miyagawa as taught by Matsubara et al. The motivation for doing so would have been to prevent the discharge current from flowing from the common electrode to a grounding line.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**HAI PHAM
PRIMARY EXAMINER**

September 7, 2004